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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/532,876	10/14/2005	Hiroshi Yoshimine	0230-0224PUS1	2285

2292 7590 05/12/2006

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EXAMINER

ROSENAU, DEREK JOHN

ART UNIT PAPER NUMBER

2834

DATE MAILED: 05/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/532,876

Applicant(s)

YOSHIMINE ET AL.

Examiner

Derek J. Rosenau

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 28 April 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 April 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 4/28/05.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Information Disclosure Statement***

1. The information disclosure statement filed 4/28/05 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered.

### ***Drawings***

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: 7". Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: B', B". Corrected drawing sheets in compliance with 37 CFR 1.121(d), or

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amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

#### ***Claim Objections***

4. Claim 6 is objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim must be in the alternative form only. Also, claim 6 purports to be an apparatus claim, but depends on both an apparatus claim, and a method claim. See MPEP § 608.01(n). Accordingly, the claim 6 has not been further treated on the merits:

#### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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6. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshiuchi et al. (US 6748807) in view of Sparks (US 6647778) in further view of Larson, III et al. (US 20030041654).

7. With respect to claim 1, Yoshiuchi discloses a method for preventing signal coupling between two or more chip-based mounted piezoelectric resonator sensors, provided with its own resonator (item 7), connected to its own oscillator circuit (item 2), and its own power supply (column 4, lines 60 through column 5, lines 2), characterized by the steps of providing each sensor with its own, individual conducting shield (item 8 and 17), which substantially surrounds said oscillator circuit and by connecting said conducting shield to one pole of the power supply (column 6, lines 4-7).

Yoshiuchi et al. does not disclose expressly a sensor system wherein the sensors are connected in series or parallel, or that each sensor has a flowcell body.

Sparks teaches a piezoelectric sensor including a flowcell body (Fig 2).

Larson, III et al. teaches a piezoelectric sensor system wherein a plurality of sensors are connected in series and parallel (column 9, lines 43-46).

At the time of invention, it would have been obvious to a person of ordinary skill in the art to combine the flowcell body of Sparks and the multiple sensor arrangement of Larson, III et al. with the piezoelectric sensor of Yoshiuchi et al. for the benefit of creating a more versatile device, capable of being used with fluids, and to create a sensors system with redundancy (column 9, lines 41-43 of Larson, III et al.).

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8. With respect to claim 2, the combination of Yoshiuchi et al., Sparks, and Larson, III et al. discloses the method in accordance with claim 1. Yoshiuchi discloses that each shield substantially surrounds its respective flowcell body (items 8 and 17).

9. With respect to claim 3, the combination of Yoshiuchi et al., Sparks, and Larson, III et al. discloses the method in accordance with claim 1 or 2. Yoshiuchi discloses providing each sensor with its own, individual conducting shield which substantially surrounds said sensor (items 8 and 17) comprises the steps of making a flowcell body out of non-conducting material (column 3, lines 24-26) and coating substantially all of the outer surfaces of said flowcell body with a conducting material. While Yoshiuchi does not disclose expressly coating substantially all the outer surfaces with the conducting material, it would be obvious to do so to maximize the level of protection from electromagnetic interference.

10. With respect to claim 4, the combination of Yoshiuchi et al., Sparks, and Larson, III et al. discloses the method in accordance with claim 1. Yoshiuchi discloses that each shield does not surround its respective flowcell body (Fig 11, item 8).

11. Claims 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshiuchi et al. (US 6748807) in view of Sparks (US 6647778).

12. With respect to claim 5, Yoshiuchi et al. discloses a piezoelectric resonator sensor comprising a body comprising a resonator (item 7) connected to an oscillator circuit (item 2) and a power supply (column 4, lines 60 through column 5, lines 2) characterized in that said oscillator circuit is substantially surrounded by a conducting

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shield (items 8 and 17) which is connectable to one pole of the power supply (column 6, lines 4-7).

Yoshiuchi et al. does not disclose expressly that each sensor has a flowcell body.

Sparks teaches a piezoelectric sensor including a flowcell body (Fig 2).

At the time of invention, it would have been obvious to a person of ordinary skill in the art to combine the flowcell body of Sparks with the piezoelectric sensor of Yoshiuchi et al. for the benefit of creating a more versatile device, capable of being used with fluids.

13. With respect to claim 6, the combination of Yoshiuchi et al. and Sparks discloses the piezoelectric resonator sensor in accordance with claim 5. Yoshiuchi discloses that said conducting shield substantially surrounds said body (item 17)

14. With respect to claim 7 the combination of Yoshiuchi et al. and Sparks discloses the piezoelectric resonator sensor in accordance with claim 5. Yoshiuchi discloses that each shield does not surround its respective said body (Fig 11, item 8).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Derek J. Rosenau whose telephone number is 571-272-8932. The examiner can normally be reached on Monday thru Friday 8:00-4:30.

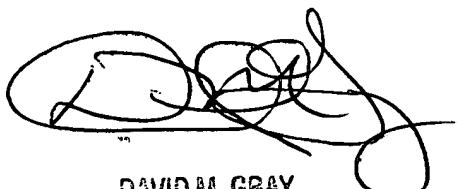
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Gray can be reached on 571-272-2119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Derek J Rosenau  
Examiner  
Art Unit 2834

DJR  
5/10/06



DAVID M. GRAY  
PRIMARY EXAMINER